

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A scheduling system performed by a computer for scheduling a plurality of time-dependent tasks, said scheduling system comprising:

- (a) an enumerative brute force module;
- (b) a dynamic programming module that generates lowest-cost partial paths for said plurality of time-dependent tasks, said dynamic programming module including a hashing function having a low probability of collision, wherein said hashing function is useable in conjunction with a height balanced binary search tree that stores said lowest-cost partial paths;
- (c) a genetic module; and
- (d) a partitioner module for selecting one of said brute force module, said dynamic programming module, or said genetic module to generate a schedule ~~for selecting of~~ said plurality of time-dependent tasks.

2. (Currently Amended) The scheduling system performed by a computer of Claim 1 further comprising a constraints file, said constraints file providing an input to said partitioner module.

3. (Currently Amended) The scheduling system performed by a computer of Claim 2, wherein said constraints file includes at least one predetermined time constraint.

4. (Currently Amended) The scheduling system performed by a computer of Claim 3, wherein said predetermined time constraint further includes at least one constraint selected from the group consisting of:

- (a) a precedence constraint, wherein said precedence constraint limits scheduling of said tasks according to a predetermined order of occurrence in time;
- (b) a time window constraint, wherein said time window constraint limits scheduling of said tasks within a time window of a predetermined length;
- (c) a priority constraint, wherein said priority constraint limits scheduling of said tasks to a sequence according to a predetermined priority; and
- (d) a conditional constraint, wherein said conditional constraint limits scheduling of said tasks based on an occurrence of at least one event.

5. (Currently Amended) The scheduling system performed by a computer of Claim 1, wherein said brute force module includes a task list, a schedule permutation generator, and a schedule evaluator.

6. (Currently Amended) The scheduling system performed by a computer of Claim 5, wherein said schedule permutation generator includes a first algorithm, said first algorithm enumerating each possible permutation of the time dependent tasks in a schedule.

7. (Currently Amended) The scheduling system performed by a computer of Claim 5, wherein said schedule evaluator is an efficiency evaluator.

8. (Currently Amended) The scheduling system performed by a computer of Claim 7, wherein said efficiency evaluator includes at least one parameter selected from the group consisting of a time parameter, a cost parameter, and a user-defined parameter.

9. (Currently Amended) The scheduling system performed by a computer of Claim 7, wherein said efficiency evaluator includes a second algorithm, said second algorithm determining an efficiency of each task based on a position of said task in a schedule.

10. (Currently Amended) The scheduling system performed by a computer of Claim 1, wherein said dynamic programming module includes a task list, a dynamic programming schedule permutation generator, and a schedule evaluator.

11. (Currently Amended) The scheduling system performed by a computer of Claim 10, wherein said dynamic programming schedule permutation generator includes a third algorithm, said third algorithm:

- (a) designating a number of tasks to store in memory at a given time;
- (b) placing the number of tasks in an order of efficiency; and
- (c) determining whether a task outside of the number of tasks is more efficient than a task within the number of tasks.

12. (Currently Amended) The scheduling system performed by a computer of Claim 10, wherein said schedule evaluator is an efficiency evaluator.

13. (Currently Amended) The scheduling system performed by a computer of Claim 12, wherein said efficiency evaluator includes a parameter selected from the group consisting of a time parameter, a cost parameter, and at least one user-defined parameter.

14. (Currently Amended) The scheduling system performed by a computer of Claim 12, wherein said efficiency evaluator includes a fourth algorithm, said fourth enumerating each possible permutation of the time dependent tasks.

15. (Currently Amended) The scheduling system performed by a computer of Claim 1, wherein said genetic module includes a task list, a genetic schedule permutation generator, and a schedule evaluator.

16. (Currently Amended) The scheduling system performed by a computer of Claim 15, wherein said genetic schedule permutation generator includes a fifth algorithm, said fifth algorithm mating a first schedule and a second schedule to breed a third schedule.

17. (Currently Amended) The scheduling system performed by a computer of Claim 15, wherein said schedule evaluator is an efficiency evaluator.

18. (Currently Amended) The scheduling system performed by a computer of Claim 17, wherein said efficiency evaluator includes at least one parameter selected from the group consisting of a time parameter, a cost parameter, and a user-defined parameter.

19. (Currently Amended) The scheduling system performed by a computer of Claim 17, wherein said efficiency evaluator includes a sixth algorithm, said sixth algorithm enumerating each possible permutation of the time dependent tasks.

20. (Currently Amended) The scheduling system performed by a computer of Claim 1, wherein said partitioner module includes a brute force partitioner and a residual evaluator.

21. (Currently Amended) The scheduling system performed by a computer of Claim 20, wherein said brute force partitioner includes a brute force time completion estimator.

22. (Currently Amended) The scheduling system performed by a computer of Claim 21, wherein said brute force time completion estimator includes a seventh algorithm, said seventh algorithm:

- (a) generating a given number of schedule permutations using the brute force module;
- (b) estimating a time to complete all possible schedule permutations using the brute force module based on the time taken to generate the given number of schedule permutations; and

- (c) determining whether the estimated time to complete all possible schedule permutations using the brute force module exceeds a given time limit.

23. (Currently Amended) The scheduling system performed by a computer of Claim 20, wherein said residual evaluator includes a time completion estimator for said dynamic program module and said genetic module.

24. (Currently Amended) The scheduling system performed by a computer of Claim 23 further including a hardware resource evaluator.

25. (Currently Amended) The scheduling system performed by a computer of Claim 24, wherein said hardware resource evaluator includes a memory module and a central processing unit.

26. (Currently Amended) The scheduling system performed by a computer of Claim 23, wherein said residual evaluator includes an eighth algorithm, said eighth algorithm:

- (a) generating a given number of schedule permutations using the dynamic programming module;
- (b) estimating a time to complete all possible schedule permutations using the dynamic programming module based on the time taken to generate the given number of schedule permutations; and
- (c) determining whether the estimated time to complete all possible schedules using the dynamic programming module permutations exceeds a given time limit.

27. (Currently Amended) A dynamic programming module for a computer that generates lowest-cost partial paths for a plurality of time-dependent tasks, said module adapted to provide at least one solution for a scheduling problem, said dynamic programming module including:

- (a) a hashing function with a low probability of collision, said hashing function being capable of detecting duplicate solutions generated by said dynamic program module; and
- (b) a height-balanced binary tree for providing search, insertion and deletion operations on said lowest-cost partial paths.

28. (Currently Amended) A scheduling system performed by a computer for scheduling a plurality of time-dependent tasks, said scheduling system comprising:

- (a) an enumerative brute force module;
- (b) a dynamic programming module that generates lowest-cost partial paths for said plurality of time-dependent tasks, said dynamic programming module including a hashing function with a low probability of collision, said hashing function being capable of detecting duplicate solutions generated by said dynamic program module and a height-balanced binary tree for providing search insertion and deletion operations on said lowest-cost partial paths;
- (c) a genetic module;
- (d) a partitioner module for selecting one of said brute force module, said dynamic programming module, or genetic module to generate a schedule for ~~selecting~~ said plurality of time-dependent tasks; and
- (e) a constraints file, said constraints file providing an input to said partitioner module.

29. (Currently Amended) The scheduling system performed by a computer of Claim 28, wherein said constraints file includes at least one predetermined time constraint.

30. (Currently Amended) The scheduling system performed by a computer of Claim 29, wherein said predetermined time constraint further includes at least one constraint selected from the group consisting of:

- (a) a precedence constraint, wherein said precedence constraint limits scheduling of said tasks according to a predetermined order of occurrence in time;
- (b) a time window constraint, wherein said time window constraint limits scheduling of said tasks within a time window of a predetermined length;
- (c) a priority constraint, wherein said priority constraint limits scheduling of said tasks to a sequence according to a predetermined priority; and
- (d) a conditional constraint, wherein said conditional constraint limits scheduling of said tasks based on an occurrence of at least one event.

31. (Currently Amended) The scheduling system performed by a computer of Claim 28, wherein said brute force module includes a task list, a schedule permutation generator, and a schedule evaluator.

32. (Currently Amended) The scheduling system performed by a computer of Claim 31, wherein said schedule permutation generator includes a first algorithm, said first algorithm enumerating each possible permutation of the time dependent tasks in a schedule.

33. (Currently Amended) The scheduling system performed by a computer of Claim 31, wherein said schedule evaluator is an efficiency evaluator.

34. (Currently Amended) The scheduling system performed by a computer of Claim 33, wherein said efficiency evaluator includes at least one parameter selected from the group consisting of a time parameter, a cost parameter, and a user-defined parameter.

35. (Currently Amended) The scheduling system performed by a computer of Claim 33, wherein said efficiency evaluator includes a second algorithm, said second algorithm determining an efficiency of each task based on a position of said task in a schedule.

36. (Currently Amended) The scheduling system performed by a computer of Claim 28, wherein said dynamic programming module includes a task list, a dynamic programming schedule permutation generator, and a schedule evaluator.

37. (Currently Amended) The scheduling system performed by a computer of Claim 36, wherein said dynamic programming schedule permutation generator includes a third algorithm, said third algorithm:

- (a) designating a number of tasks to store in memory at a given time;
- (b) placing the number of tasks in an order of efficiency; and
- (c) determining whether a task outside of the number of tasks is more efficient than a task within the number of tasks.

38. (Currently Amended) The scheduling system performed by a computer of Claim 36, wherein said schedule evaluator is an efficiency evaluator.

39. (Currently Amended) The scheduling system performed by a computer of Claim 38, wherein said efficiency evaluator includes a parameter selected from the group consisting of a time parameter, a cost parameter, and at least one user-defined parameter.

40. (Currently Amended) The scheduling system performed by a computer of Claim 38, wherein said efficiency evaluator includes a fourth algorithm, said fourth enumerating each possible permutation of the time dependent tasks.

41. (Currently Amended) The scheduling system performed by a computer of Claim 28, wherein said genetic module includes a task list, a genetic schedule permutation generator, and a schedule evaluator.



42. (Currently Amended) The scheduling system performed by a computer of Claim 41, wherein said genetic schedule permutation generator includes a fifth algorithm, said fifth algorithm mating a first schedule and a second schedule to breed a third schedule.

43. (Currently Amended) The scheduling system performed by a computer of Claim 41, wherein said schedule evaluator is an efficiency evaluator.

44. (Currently Amended) The scheduling system performed by a computer of Claim 43, wherein said efficiency evaluator includes at least one parameter selected from the group consisting of a time parameter, a cost parameter, and a user-defined parameter.

45. (Currently Amended) The scheduling system performed by a computer of Claim 43, wherein said efficiency evaluator includes a sixth algorithm, said sixth algorithm enumerating each possible permutation of the time dependent tasks.

46. (Currently Amended) The scheduling system performed by a computer of Claim 28, wherein said partitioner module includes a brute force partitioner and a residual evaluator.

47. (Currently Amended) The scheduling system performed by a computer of Claim 46, wherein said brute force partitioner includes a brute force time completion estimator.

48. (Currently Amended) The scheduling system performed by a computer of Claim 47, wherein said brute force time completion estimator includes a seventh algorithm, said seventh algorithm:

- (a) generating a given number of schedule permutations using the brute force module;
- (b) estimating a time to complete all possible schedule permutations using the brute force module based on the time taken to generate the given number of schedule permutations; and

- (c) determining whether the estimated time to complete all possible schedule permutations using the brute force module exceeds a given time limit.

49. (Currently Amended) The scheduling system performed by a computer of Claim 46, wherein said residual evaluator includes a time completion estimator for said dynamic program module and said genetic module.

50. (Currently Amended) The scheduling system performed by a computer of Claim 49 further including a hardware resource evaluator.

51. (Currently Amended) The scheduling system performed by a computer of Claim 50, wherein said hardware resource evaluator includes a memory module and a central processing unit.

52. (Currently Amended) The scheduling system performed by a computer of Claim 49, wherein said residual evaluator includes an eighth algorithm, said eighth algorithm:

- (a) generating a given number of schedule permutations using the dynamic programming module;
- (b) estimating a time to complete all possible schedule permutations using the dynamic programming module based on the time taken to generate the given number of schedule permutations; and
- (c) determining whether the estimated time to complete all possible schedule permutations using the dynamic programming module permutations exceeds a given time limit.

53. (Currently Amended) A method for scheduling a plurality of time-dependent tasks performed by a computer, said method comprising the steps of:

- (a) providing an input to a partitioner module;
- (b) selecting a scheduling module from the group consisting of: an enumerative brute force module; a dynamic programming module that

generates lowest-cost partial paths for said plurality of time-dependent tasks, said module including a hashing function with a low probability of collision, wherein said hashing function is useable in conjunction with a height balanced binary search tree that stores said lowest-cost partial paths; a genetic module; and

- (c) generating a schedule.

54. (Currently Amended) A method for scheduling a plurality of time-dependent tasks performed by a computer, said method comprising the steps of:

- (a) providing an input to a partitioner module;
- (b) selecting a scheduling module from the group consisting of: an enumerative brute force module; a dynamic programming module that generates lowest-cost partial paths for said plurality of time-dependent tasks, said dynamic programming module including a hashing function with a low probability of collision, said hashing function being capable of detecting duplicate solutions generated by said dynamic program module and a height-balanced binary tree for providing search insertion and deletion operations on said lowest-cost partial paths; a genetic module; and
- (c) generating a schedule.